

DoD Global Influenza Surveillance Program: *Influenza Surveillance at AFIOH*

Overall Lab Surveillance

Total Specimens Collected

- Collected in Week 49: 62
- Season Total: 522

Newly identified Influenza

Newly identified; Cumulative

- Influenza A: 6 ; 17
- Influenza B: 1 ; 2

Newly subtyped influenza

Newly identified; Cumulative

- Influenza A/H3N2: 5 ; 9
- Influenza A/H1N1: 1 ; 1

Sentinel Site Lab Surveillance

Total Specimens Collected

- Collected in Week 49: 46
- Season Total: 385

Newly identified influenza

Newly identified; Cumulative

- Influenza A: 5 ; 14
- Influenza B: 1 ; 1

Newly subtyped influenza

Newly identified; Cumulative

- Influenza A/H3N2: 4 ; 8
- Influenza A/H1N1: 1 ; 1

Research Lab Surveillance

Total Specimens Collected

- Collected in Week 49: 4
- Season Total: 32

Newly identified Influenza

Newly identified; Cumulative

- Influenza A: 0 ; 0
- Influenza B: 0 ; 1

Newly subtyped influenza

Newly identified; Cumulative

- Influenza A/H3N2: 0 ; 0

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Week 49

04 - 10 December 2005

Current WHO Phase of Pandemic Alert: **PHASE 3**

***Phase 3** = a new influenza virus subtype is causing disease in humans, but is not yet spreading efficiently and sustainably among humans. *The designation of phases, including decisions on when to move from one phase to another, is made by the Director-General of WHO.*

Source: [WHO](http://www.who.int)

Influenza (02 Oct - Present)

19 influenza viruses isolated
(17 influenza A; 2 influenza B)

Influenza A

A (H1N1): 1*
A (H3N2): 9*
Not typed: 7

Influenza B

B (99): 0
B (01): 0
Not typed: 2

Locations of identified influenza viruses



Locations of identified influenza subtypes



*One influenza A/H3N2 (collected in Week 43), one influenza A/H1N1 (collected in Week 48), and one Influenza B-not yet typed (collected in Week 47) were identified in Kuwait.

Update: Human Avian Influenza (H5N1)

One new fatal case reported on 14 December 2005 in West Jakarta. See pg 10 for an overview.

Influenza Outbreaks

Sentinel sites have not notified AFIOH of influenza outbreaks occurring at this time.

AFIOH Reporting Procedures

- Overall Laboratory Surveillance** (i.e., all respiratory specimens submitted to and processed by the AFIOH laboratory);
- Sentinel Site Laboratory Surveillance** (i.e., respiratory specimens submitted by the 39 sentinel sites using the protocol of selecting 6-10 influenza-like illness [ILI] specimens per week);
- Overseas Research Laboratory Surveillance** (i.e., respiratory specimens submitted by two of the DoD overseas medical research laboratories [AFRIMS and NMRC-D] and the CHPPM-W sites); and
- Additional Surveillance** (i.e., Army MEDCEN, CDC, and WHO surveillance summaries).

Overall Laboratory Surveillance

Sites submitting specimens for respiratory testing

Week 49. 21 sites collected specimens during Week 49 (16 sentinel, 4 non-sentinel, and 1 overseas lab) and were received by AFIOH at the time of this report. See map to the right.

Season submission. Since 02 October 2005, a total of 48 sites have submitted specimens to the AFIOH laboratory.

Fifty-one percent (n=268) of the specimens were collected from OCONUS sites and 49% (n=254) were from CONUS sites.



Overall Laboratory Results

Week 49 overview

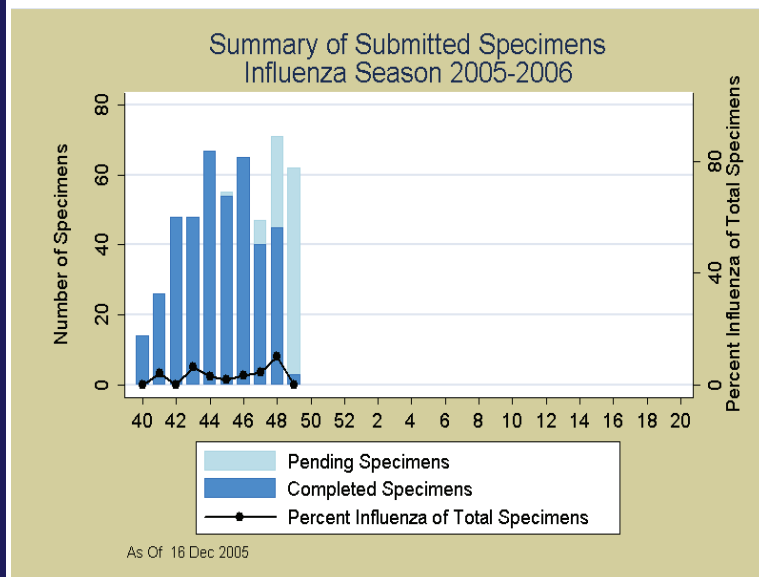
- **Specimens "collected" during Week 49.** 62 specimens were collected and received at the AFIOH laboratory at the time of this report. 5% (n=3) of the specimens collected during Week 49 have a completed result. Of these, 67% (n=2) were positive for parainfluenza and 33% (n=1) were positive for enterovirus.
- **Specimens "received" during Week 49.** 83 specimens were received at the AFIOH laboratory during Week 49 and are undergoing processing at this time. The specimens received during Week 49 were collected from patients during Weeks 41-49.

Influenza. Of the specimens with completed results, 5% were positive for an influenza virus (4.1% influenza A; 0.5% influenza B). Seventy-nine percent (n=15) of the influenza positive specimens were collected from sentinel sites, 16% (n=3) were from non-sentinel sites, and 5% (n=1) were from an overseas research site.

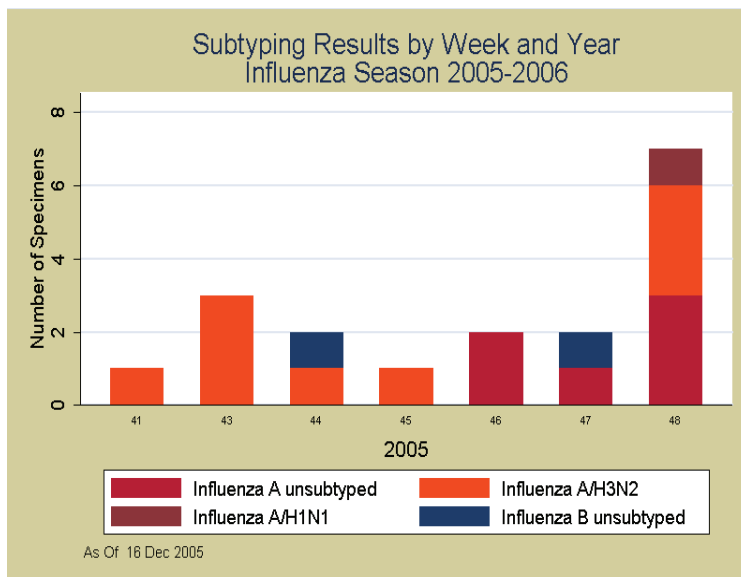
Subtyping. A total of 53% (n=10) of the influenza isolates have been subtyped to date: 9 influenza A/H3N2 ; 1 influenza A/H1N1.

Please view Graphs 1-2 for an overview of influenza results by week collected.

Graph 1.



Graph 2.



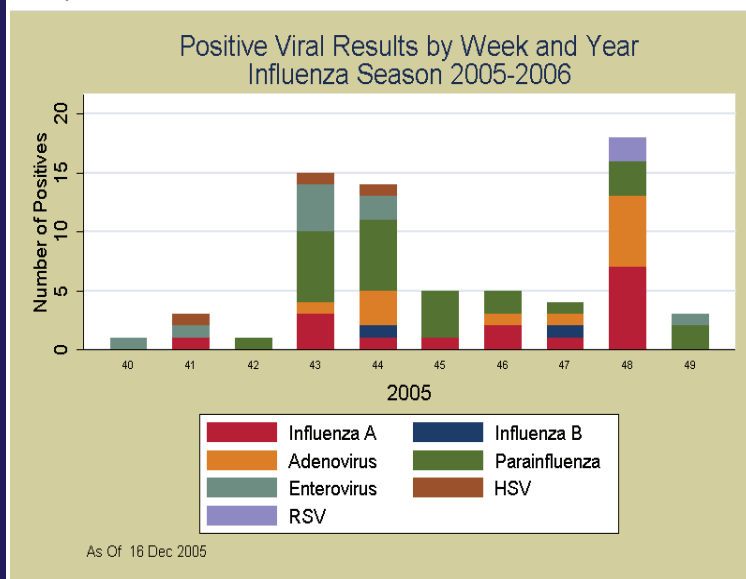
Overall Laboratory Results: Season Overview

Season overview. Since 02 October 2005 to date, a total of 522 specimens were collected and 78% (n=406) have a completed result. Of these, 83% (n=335) were negative and 17% (n=71) were positive for a respiratory virus. Of these, 24% (n=17) were influenza A, 3% (n=2) were influenza B; 18% (n=13) were adenovirus, 35% (n=25) were parainfluenza, 13% (n=9) were enterovirus, 4% (n=3) were HSV; and 3% (n=2) were RSV (Graph 3.)

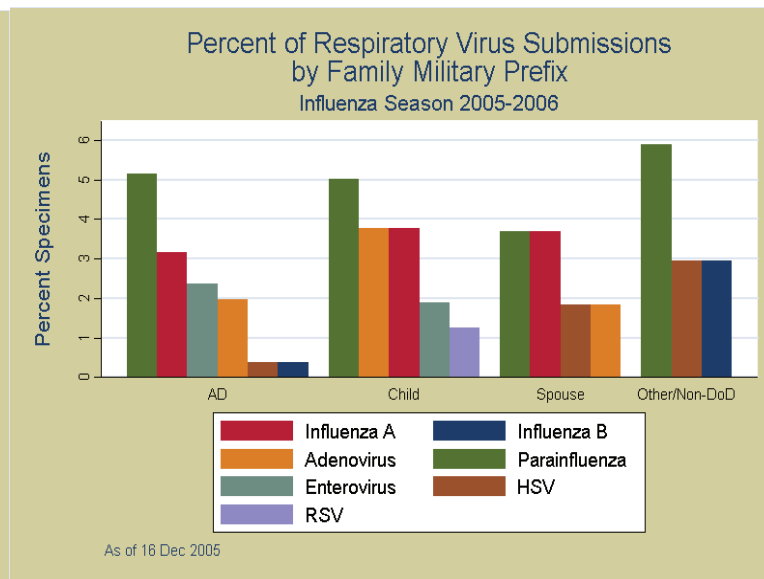
Demographics. Of the patients with completed specimen results, 51% (n=203) were active duty members, 32% (n=126) were children, 9% (n=35) were spouses, and 8% (n=30) were classified as other or non-DoD beneficiary (Graph 4).

Patients having a positive influenza isolate were 50% (n=9) active duty members, 33% (n=6) children, 11% (n=2) spouses, and 6% (n=1) non-DoD beneficiary (influenza B positive). Two of the influenza positive patients were related (mother and son [1 year of age]). Vaccine history is currently unavailable for these two patients, as specimens were collected from a non-sentinel site.

Graph 3.



Graph 4.



The majority (50%) of specimens received were collected from the NORTHCOM Area of Responsibility (AOR). Influenza positive specimens were collected from NORTHCOM (56%), PACOM (17%), CENTCOM (17%), EUCOM (5%), and OTHER (5%). See Table 1. for an overview.

Table 1. Laboratory Results by Military Command, Current Week and Season Totals.

Result	Area of Responsibility										ALL SITES
	CENTCOM		EUCOM		NORTHCOM		PACOM		OTHER		
	Week	Season	Week	Season	Week	Season	Week	Season	Week	Season	
Influenza A		2		1		11		3			17
Influenza B		1								1	2
Adenovirus				2		7		4			13
Parainfluenza		1		7	2	16				1	25
Enterovirus	1	1		4		2		2			9
HSV		1		1						1	3
RSV						2					2
Negative		14		46		163		87		25	335
Pending		9	11	16	35	67	9	20	4	4	116
TOTAL RECEIVED	1	29	11	77	37	268	9	116	4	32	522

Note: "OTHER" AOR describes those specimens submitted by DoD overseas research laboratories and CHPPM-W sites.

Sentinel Site Laboratory Surveillance

Thirty-nine sentinel sites are requested to collect 6-10 specimens each week from patients meeting the ILI case definition (**fever $\geq 100.5^{\circ}\text{F}$ and cough or sore throat**) and complete the "Influenza Surveillance Questionnaire". Two sentinel sites, Tripler Army Medical Center (AMC), located in Hawaii, and Landstuhl Regional Medical Center (RMC), located in Germany, send selected influenza positive specimens to AFIOH to be further characterized. These sites are major medical centers and have established laboratories capable of detecting influenza. Their involvement in the DoD-wide program is valued due to their mission and geographical location.



Sites submitting specimens for respiratory testing

Week 49. 16 sentinel sites collected specimens during Week 49 (see map to the right).

Season submission. Since 02 October 2005, a total of 28 sentinel sites have collectively submitted 385 specimens.

Forty-two percent (n=163) of the specimens were collected from OCONUS sentinel sites and 58% (n=222) were from CONUS sentinel sites.



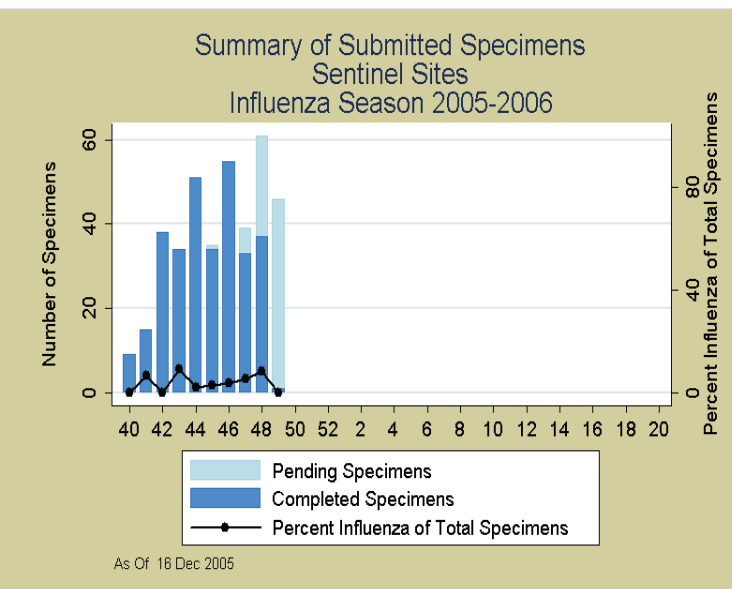
Sentinel Site Laboratory Results

Week 49 overview. 46 specimens were collected during Week 49 and received by the AFIOH laboratory at the time of this report. 2% (n=1) of the specimens have a completed result (enterovirus).

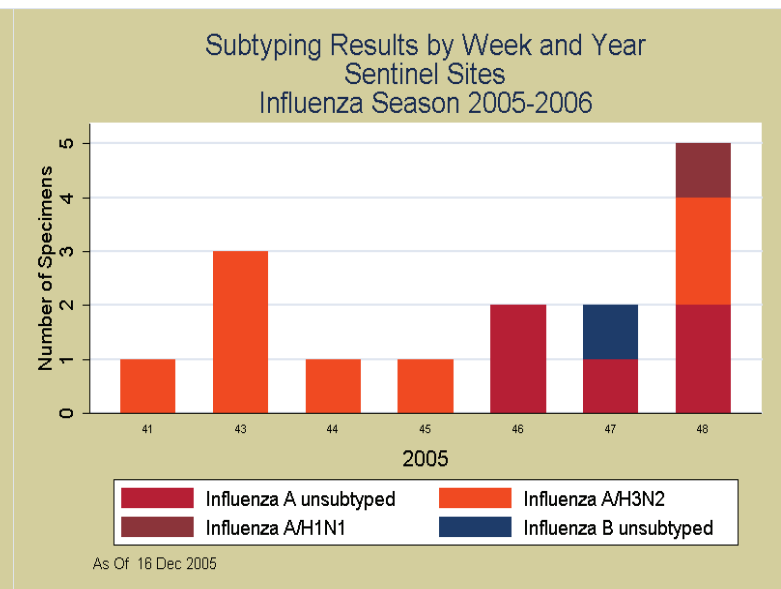
Influenza. Of the total specimens having a completed result, 5% were positive for an influenza virus (Graph 5.). Influenza was identified in Guam, Hawaii, Italy, Kuwait, California, and Colorado.

Subtyping. 60% (n=9) of the influenza isolates have been subtyped to date: 8 influenza A/H3N2; 1 influenza A/H1N1 (Graph 6.).

Graph 5.



Graph 6.



Season overview. Since 02 October 2005, a total of 385 specimens were collected and 78% (n=302) have a completed result at this time. Of these, 82% (n=248) were negative and 14% (n=54) were positive for a respiratory virus.

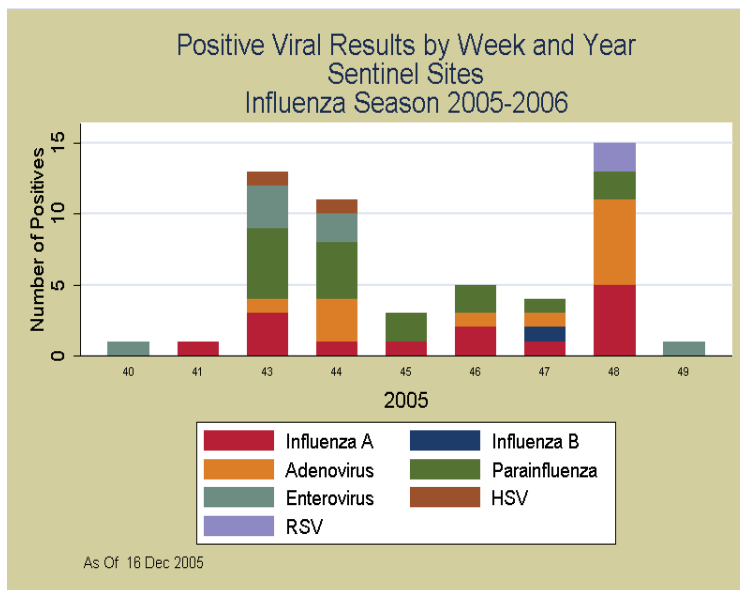


Table 2. Sentinel Site Laboratory Results by Area of Responsibility

Result	Area of Responsibility								ALL SITES
	CENTCOM		EUCOM		NORTHCOM		PACOM		
	Week	Season	Week	Season	Week	Season	Week	Season	
Influenza A		2		1		8		3	14
Influenza B		1							1
Adenovirus				2		6		4	12
Parainfluenza		1		7		8			16
Enterovirus	1	1		4				2	7
HSV		1		1					2
RSV						2			2
Negative		14		46		101		87	248
Pending		9	11	16	25	38	9	20	83
TOTAL RECEIVED	1	29	11	77	25	163	9	116	385

Influenza Overview: Demographic Data*

Demographics	Newly Identified		Cumulative (Season)	
	A	B	A	B
Age (years)				
0-5	0	0	0	0
6-19	1	0	5	0
20-64	4	1	9	1
65 +	0	0	0	0
Unknown	0	0	0	0
OVERALL TOTALS	5	1	14	1

Family Prefix Status	A	B	A	B
Military member/Sponsor	4	0	8	0
Spouse	0	1	1	1
Child	1	0	5	0
Other/Unknown	0	0	0	0
OVERALL TOTALS	5	1	14	1

Demographics	Newly Identified		Cumulative (Season)	
	A	B	A	B
Vaccination Status				
Injection	0	0	0	0
Nasal Spray (FluMist)	0	0	0	0
Not Vaccinated	0	0	4	0
Unknown	6	0	11	0
OVERALL TOTALS	6	0	15	0

Hospitalization Status	A	B	A	B
Hospitalized	0	0	0	0
Quarters	0	0	0	0
OVERALL TOTALS	0	0	0	0

*Describes sentinel site data only

Demographics	Newly Identified		Cumulative (Season)	
Sentinel Sites (by MAJCOM)	A	B	A	B
CENTCOM				
Al Udeid AB, Qatar	0	0	0	0
Camp Arifjan	2	0	2	0
Balad AB	0	0	0	0
Camp Buehring	0	1	0	1
Manas AB	0	0	0	0
AETC				
Maxwell AFB, AL	0	0	0	0
Sheppard AFB, TX	0	0	0	0
AMC				
Andrews AFB, MD	0	0	0	0
McGuire AFB/FT. Dix, NJ	0	0	0	0
Scott AFB, IL	0	0	0	0
Travis AFB, CA	0	0	0	0
USAFE				
Aviano AB, Italy	1	0	1	0
Incirlik AB, Turkey	0	0	0	0
RAF Lakenheath, UK	0	0	0	0
Ramstein AB, Germany	0	0	0	0
USAFA				
US Air Force Academy, CO	1	0	7	0
PACAF				
Andersen AFB, Guam	0	0	2	0
Elmendorf AFB, AK	0	0	0	0
Kadena AB, Japan	0	0	0	0
Kunsan AB, Korea	0	0	0	0
Misawa AB, Japan	0	0	0	0
Osan AB, Korea	0	0	0	0
Yokota AB, Japan	0	0	0	0
NAVY				
BMC Sasebo, Japan	0	0	0	0
NAB Little Creek, VA	0	0	0	0
NACC Groton, CT	0	0	0	0
NH Bethesda, MD	0	0	0	0
NH Bremerton, WA	0	0	0	0
NH Guam	0	0	0	0
NH Okinawa, Japan	0	0	0	0
NH Pearl Harbor/Hickham AFB, HI	0	0	0	0
NH Sigonella, Italy	0	0	0	0
NH Yokosuka, Japan	0	0	0	0
NMC San Diego, CA	0	0	1	0
ARMY				
Ft Drum, NY	0	0	0	0
Landstuhl RMC, Germany	0	0	0	0
Tripler AMC, HI	1	0	1	0
COAST GUARD				
Ketchikan, AK	0	0	0	0
OVERALL SENTINEL TOTALS	5	1	14	1

Overseas Medical Research Laboratory Surveillance

Specimens are batched for shipments and therefore we do not receive specimens on a weekly or monthly basis.

Sites submitting specimens for respiratory testing

Week 49. One CHPPM-W site located in Honduras collected specimens during **Week 49**.

Season submission. Since 02 October 2005, the AFIOH laboratory received specimens from one CHPPM-W site that collected specimens from local residents in Honduras.



Laboratory Results

Week 49 overview. 4 specimens were collected during Week 49 and received at AFIOH at the time of this report. Specimen results are pending at this time.

Season overview. Since 02 October 2005, 32 specimens were collected and 88% (n=28) have a completed result. Of these, 89% (n=25) were negative and 11% (n=3) were positive for a respiratory virus. Of the total specimens having a completed result, 4% (n=1) were positive for influenza B. Please view Graphs 7-8 and Table 3. for a visual overview.

Subtyping: Influenza B subtype is pending at this time.

Graph 7.

Graph 8.

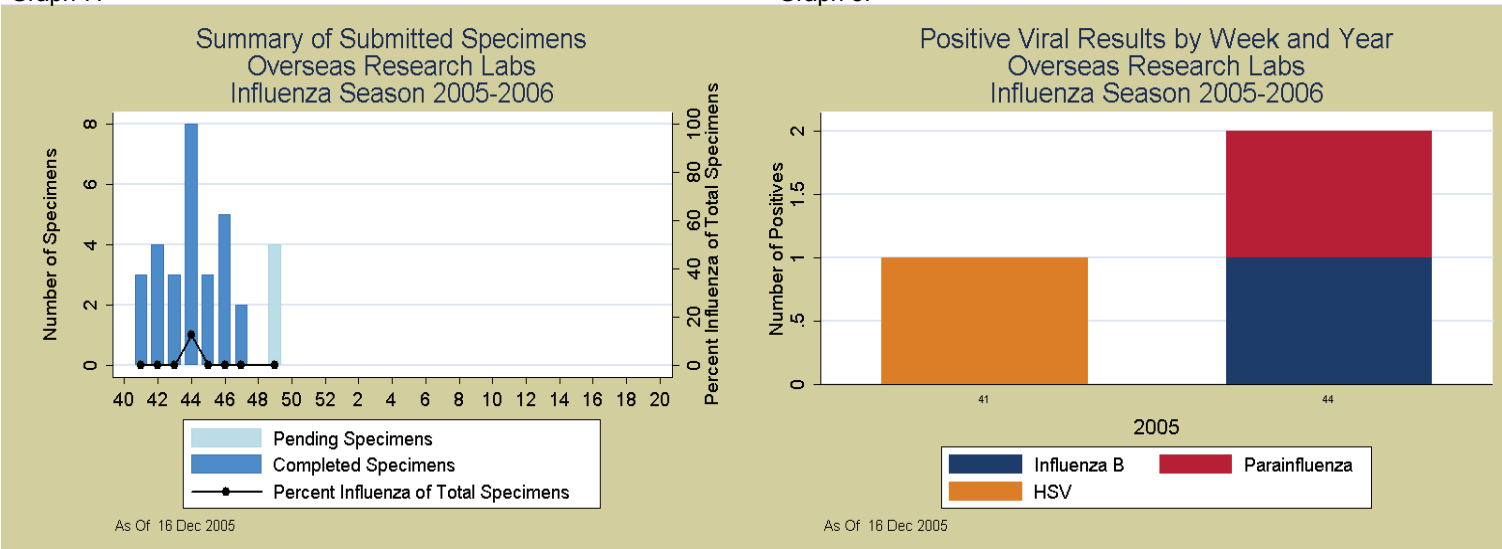


Table 3. Overseas Research Laboratory Results by Facility

Result	OVERSEAS MEDICAL RESEARCH FACILITY						ALL SITES
	AFRIMS		NMRC-D		CHPPM-W		
	Week	Season	Week	Season	Week	Season	
Influenza A							0
Influenza B						1	1
Adenovirus							0
Parainfluenza						1	1
Enterovirus							0
HSV						1	1
RSV							0
Negative						25	25
Pending					4	4	4
TOTAL RECEIVED	0	0	0	0	4	32	32

ILI Surveillance

A summary of ILI is expected in the near future.

Additional Influenza Surveillance: *Army MEDCENS*

The Army performs influenza surveillance at 6 Army Medical Center (MEDCEN) locations (Dwight David Eisenhower Army Medical Center [DDEAMC], Walter Reed Army Medical Center [WRAMC], Brooke Army Medical Center [BAMC], Madigan Army Medical Center [MAMC], Tripler Army Medical Center [TAMC], and Landstuhl Regional Medical Center [LRMC]), two of which are included in AFIOH's sentinel site surveillance network (please see map to right).

The Army MEDCEN sites are major medical centers equipped with the capability of detecting respiratory viruses, including influenza. It is important to note that the methodology varies at each site (i.e., testing procedures include direct fluorescent-antibody [DFA], various rapid antigen tests, culture, and polymerase chain reaction [PCR]) and reporting is routine, but varies from site to site (i.e., weekly, bi-weekly, monthly). The information reported and shared with AFIOH describes results from the individual MEDCENS and does not include demographic information at this time.



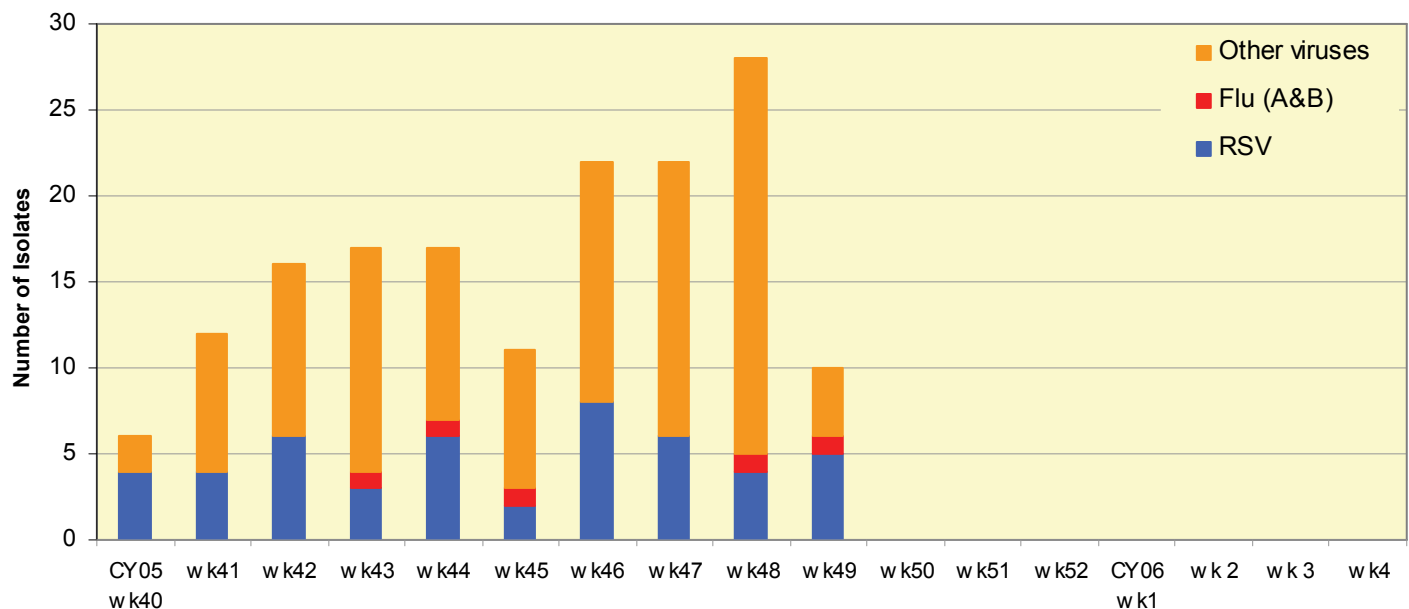
Week 49 overview. 112 specimens were collected and tested during Week 49 (7% [n=8] tested by LRMC; 28% (n=31) from BAMC; 16% (n=18) from WRAMC; 8% (n=9) from EAMC; 41% (n=46) from TAMC. 26% (n=29) were positive for a respiratory virus (1 influenza A; 5 RSV; 1 parainfluenza; 3 adenovirus).

Season overview: Since 02 October 2005, 902 specimens were collected and tested. Eighty-two percent (n=741) were negative and 18% (n=161) were positive for a respiratory virus (5 influenza A; 48 RSV; 24 parainfluenza; and 84 adenovirus). Of the specimens collected and tested, 0.6% were positive for an influenza virus (Graph 9.).

Subtyping: No data to report.

POC for MAJ Wade Aldous.

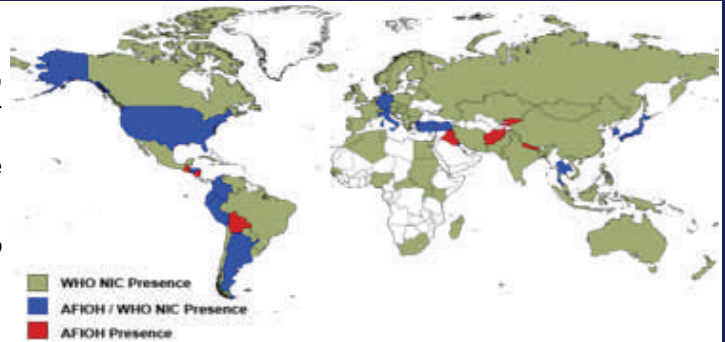
Graph 9. Number of Positive Respiratory Viruses, ARMY MEDCEN Weekly Report (as of 16 December 2005).



Contributions to National and Global Influenza Surveillance

It is important to note that although a country is highlighted, surveillance may be limited in scope. AFIOH provides surveillance data from 21 countries - 8 countries (Bolivia, El Salvador, Guatemala, Iraq, Kyrgyzstan, Nepal, Nicaragua, and Qatar) are not otherwise included in the current WHO network.

Please note: Map describes countries submitting specimens to AFIOH and does not include all DoD contributing countries (i.e., NAMRU-2 and NAMRU-3 surveillance described on page 12).



Data Sharing

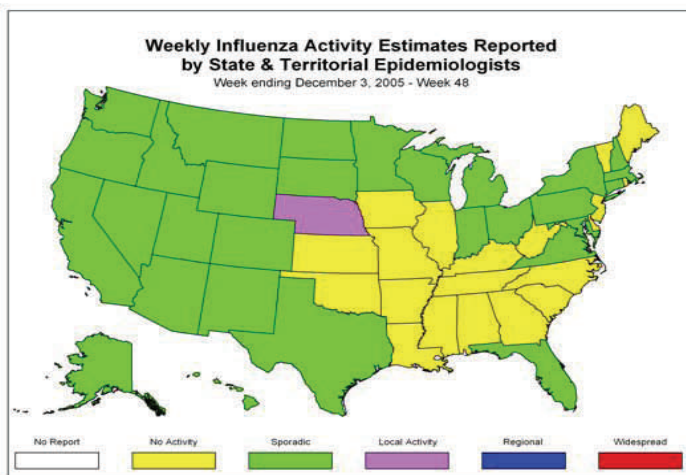
AFIOH electronically reports de-identified program data to CDC using the Public Health Laboratory Information System (PHLIS). Data are used in WHO's global influenza surveillance and CDC's United States influenza surveillance. Additionally, data from Texas military sites are reported to the Texas Department of State Health Services (TDSHS).

CDC / WHO Influenza Surveillance.

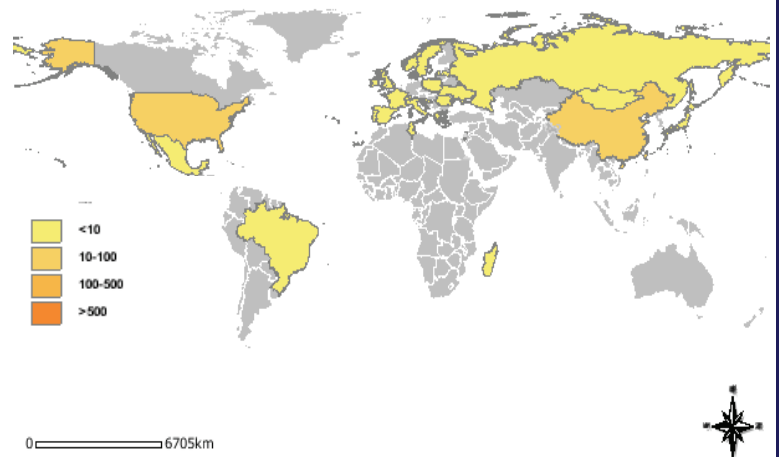
CDC reported a low influenza activity (1.3%) level during Week 48. Please see the influenza activity table and maps below.

COUNTRY	2005-2006 Season										Total Isolates
	A(H1)		A(H3)		A(not typed)		B (not typed)				
	Week	Season	Week	Season	Week	Season	Week	Season			
Argentina	0	0	0	0	0	0	0	10		10	
Australia	0	0	0	0	0	2	0	13		15	
Brazil	0	0	0	0	0	6	0	7		13	
Chile	0	0	0	0	0	0	0	2		2	
China	7	26	1	21	8	19	2	38		104	
Egypt	0	1	0	0	0	0	0	0		1	
France	0	0	0	0	0	0	2	2		2	
Greece	0	0	0	0	0	0	1	1		1	
Isreal	0	0	0	1	0	1	0	1		3	
Japan	9	29	4	65	0	0	0	0		94	
Latvia	0	0	0	0	1	1	0	1		2	
Madagascar	0	4	0	3	0	0	0	0		7	
Mexico	0	22	2	61	7	119	0	2		204	
Mongolia	0	0	0	0	1	6	0	0		6	
New Caledonia	0	0	0	2	0	4	0	0		6	
Peru	0	0	0	0	0	10	0	1		11	
Poland	0	0	0	0	0	1	0	0		1	
Portugal	0	1	0	0	0	0	2	7		8	
Slovenia	0	0	0	1	0	0	0	0		1	
Spain	0	0	0	4	0	0	0	0		4	
Sweden	0	0	0	0	0	0	0	1		1	
Switzerland	0	1	0	0	0	0	0	2		3	
Thailand	0	2	0	51	0	4	0	66		123	
Tunisia	7	19	3	4	0	0	0	2		25	
Turkey	0	0	0	0	0	0	0	2		2	
U.K. (Great Britain, N. Ireland)	2	2	0	1	0	0	2	2		5	
U.S.A	0	0	0	76	0	73	0	22		171	

CDC U.S. Influenza Surveillance Map¹



WHO International Influenza Surveillance Map²



1. National Influenza Activity (CDC): <http://www.cdc.gov/ncidod/diseases/flu/weeklychoice.htm>
2. International Influenza Activity (WHO): <http://gamapserver.who.int/GlobalAtlas/home.asp>

Influenza News

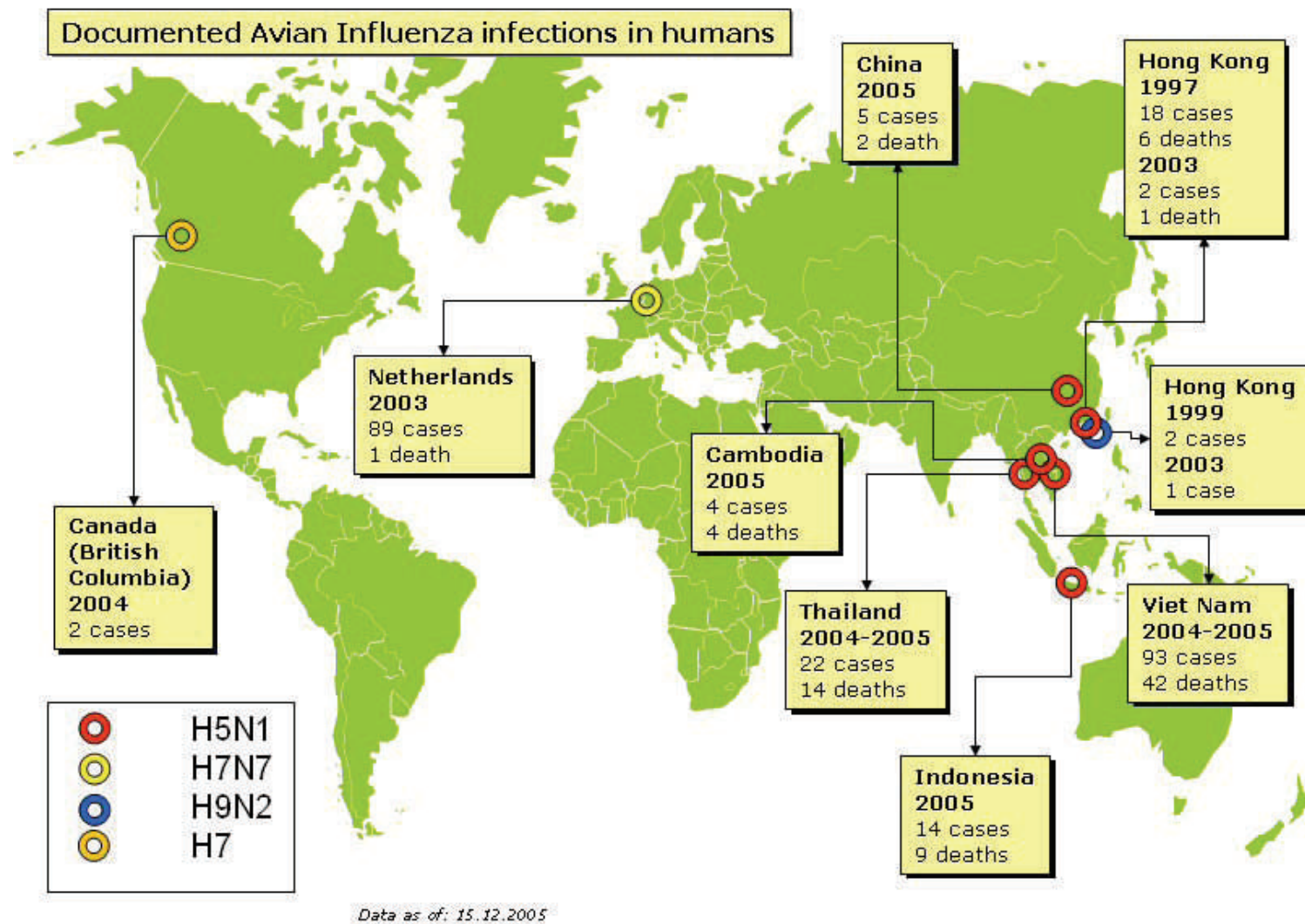
Human Avian Influenza. 138 cases of lab-confirmed avian influenza (51% case fatality rate). Table below was gathered from the EUROPA website on 16 December 2005. Reference: http://europa.eu.int/comm/health/ph_threats/com/Influenza/ai_current_en.htm

Current Situation of Avian Influenza and human cases related to the H5N1 virus subtype
(as of 15 December 2005)

Country	Cumulative number of confirmed human cases						Comments
	Cases			Deaths			
	2003	2004	2005	2003	2004	2005	
Cambodia	0	0	4	0	0	4	No new case reported since 4 May.
China (People's Rep. of)	0	0	5	0	0	2	Two additional cases reported: one reported on 7 December from Guangxi province with onset on 23 November; the second case reported on 9 December from Liaoning province with onset on 30 October. First case recovered and second still hospitalised. Both cases were exposed to diseased poultry. Outbreaks in poultry in nine provinces since mid-October.
Indonesia	0	0	14	0	0	9	One new fatal case reported on 14 December in West Jakarta. Symptoms onset on 6 November and hospitalization on 9 November, with death occurring on 19 November. H5N1 endemic in poultry and widespread.
Thailand	0	17	5	0	12	2	One additional fatal case reported with onset of symptoms on 25 November, hospitalised on 5 December and died on 7 December. Several outbreaks in poultry reported to OIE on 3 November in three provinces.
Viet Nam	3	29	61	3	20	19	One new case confirmed with onset of symptoms on 14 November. The case is now recovering
	3	46	89	3	32	36	Number of cases includes number of deaths. All cases are laboratory-confirmed. Bold text indicates changes from previous
	138			71			

Human Avian Influenza continued on pg 11 (map).

The following map was gathered on 16 December 2005 at http://europa.eu.int/comm/health/ph_threats/com/Influenza/images/influenza.jpg. Please visit the Europa website for detailed information (http://europa.eu.int/comm/health/ph_threats/com/Influenza/avian_influenza_en.htm).



DoD Global Influenza Surveillance Program Background

DoD-GEIS Influenza Surveillance Network

The DoD Global Influenza Surveillance Program was established by the Global Emerging Infections Surveillance and Response System (GEIS) in 1997. It involves a unique network of influenza surveillance efforts from the Air Force (global influenza surveillance established in 1976), the Navy (recruit adenovirus surveillance established in 1996), and the DoD overseas medical research facilities (i.e., the Naval Medical Research Unit located in Cairo, Egypt [NAMRU-2] and the Naval Medical Research Unit located in Jakarta, Indonesia [NAMRU-3]).

AFIOH Influenza Surveillance Network

In 1976, the US Air Force Medical Service began conducting routine lab-based surveillance of influenza throughout the world. Efforts were expanded when it became part of the DoD-GEIS influenza surveillance network in 1997. AFIOH manages the Air Force surveillance program that includes global influenza surveillance among DoD beneficiaries at 39 tri-service sentinel sites (including deployed locations in Iraq, Qatar, and Kyrgyzstan), several non-sentinel sites, two DoD overseas medical research laboratories (the Armed Forces Research Institute of Medical Sciences located in Bangkok, Thailand [AFRIMS], and the U.S. Naval Medical Research Center-Detachment [NMRC-D] located in Lima, Peru) that collect specimens from local residents in Nepal, Thailand, Argentina, Bolivia, Ecuador, Peru, and Colombia, and the US Army Center for Health Promotion and Preventive Medicine-West (CHPPM-W), that collect specimens from local residents in El Salvador, Guatemala, and Honduras.

Processing Methods

Specimens are processed in BSL-2 conditions (BSL-3 available) and tested for influenza, parainfluenza, adenovirus, enterovirus, herpes simplex virus (HSV), and respiratory syncytial virus (RSV). Specimens are held up to 14 days before a negative result is given. All influenza isolates are typed as A or B and a portion are subtyped using hemagglutination-inhibition (HI) or polymerase chain reaction (PCR) procedures. A portion of these isolates undergo molecular sequencing.

2005-2006 Trivalent Influenza Vaccine Composition

Northern Hemisphere

- A/New Caledonia/20/99-like (H1N1)
- A/California/7/2004-like (H3N2)
- B/Shanghai/361/2002-like

2006 Southern Hemisphere

- A/New Caledonia/20/99-like (H1N1)
- A/California/7/2004-like (H3N2)*
- B/Malaysia/2506/2004

**The currently used vaccine virus is A/New York/55/2004*

This report was prepared on **16 December 2005** by Angela Owens. For an expanded view of the information in this report, visit our website at <https://gumbo.brooks.af.mil/pestilence/Influenza/>. Also available on our website is a list of previous weekly surveillance reports, program information for sentinel sites (including an educational briefing and instruction pamphlets for clinic staff), and an overview of historical data.

Please visit the [DoD-GEIS website](#) for an overview of influenza surveillance at all collaborating centers.



AFIOH Contact Information

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